REMARKS

All pending claims 1-27 currently stand rejected under 35 U.S.C. §103(a) as being unpatentable over Xie et al (U.S. Patent No. 6,212,008) in view of Fukushima (U.S. Patent No. 6,507,422).

Applicant wishes to point out several fundamental differences between the device disclosed in Xie et al and the device according to the present invention. First and foremost, the Xie et al device is a three-port circulator, which by definition transmits all light entering the second port to the first port, and all light entering the first port to the third port. The present invention is a beam combiner/beam separator, which combines a first beam entering the second port and a second beam, orthogonally polarized to the first beam, entering the third port into a mixed beam for output the first port, or which separates a mixed beam of light entering the first port into first and second orthogonally polarized sub-beams for transmission to the second and third ports, respectively.

To expedite prosecution, the claims of the application have been amended to overcome the objections of the Examiner and to better define the invention in light of the cited prior art. In particular, claim 1 has been amended to clarify that the second and third ports input separate orthogonally polarized beams of light, which get combined and output the first port, or that the second and third ports output separate orthogonally polarized

beams of light, which were input together via the first port. This feature is clearly contrary to the teachings of Xie et al, which discloses a device that separates and recombines each input beam of light for output a single port.

Furthermore, contrary to the present invention, the non-reciprocal polarization rotator 626 disclosed in the Xie et al reference does, in fact, have an effect on the polarization of the light as it passes therethrough in either direction, as evidenced between cross-sections B-B and C-C in Figure 7A and 7B. The non-reciprocal polarization rotator of the Xie et al device comprises a single Faraday rotator, which rotates the polarization of light a given amount, but by a different direction depending on which direction the light passes, whereby the non-reciprocal rotator of the present invention rotates the polarization of light by a given amount, e.g. 90°, in one direction, and has no cumulative effect on the polarization of the light traveling in the opposite direction. Such an element is not disclosed or even inferred in the Xie et al reference.

Moreover, since the Xie et al device is a circulator, light does not travel from the second and third ports simultaneously to the first port, while light is prevented from traveling in the reverse direction. As stated above, light will travel from the second port to the first port, but light will not travel from the third port to the first port, due to the non-reciprocal nature of

the non-recoprocal polarization rotators. Moreover, light is never prevented from traveling from the first port to the third port only from the first port to the second port.

Similarly when looking at the Xie device in the splitting direction, light does not travel from the first port to the second and third ports, only to the third port. Moreover, light is never prevented from traveling from the first port to the third port.

To infer that anyone skilled in the art would be motivated to modify the Xie et al invention, so that the non-reciprocal rotator could to be driven in different directions, is totally inappropriate, as such modification to the Xie et al device would totally destroy the circulating function of the device and simply spill the light off at various locations.

If, however, any issues remain, the Examiner is invited to call Applicant's undersigned counsel so that a brief interview can be arranged to resolve these issues.

It is believed no fee is due at this time. If that determination should be incorrect, then please debit Deposit Account No. 50-0644 and notify the undersigned.

Respectfully submitted,

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I hereby certify that this paper is being facsimile transmitted to Examiner CRAIG CURTIS at Art Unit 2872 at the U.S. Patent and Trademark Office, Fax No. (703) 273-2311 on the date shown below. 571

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